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The species of the genus *Tropihypnus* REITTER, 1905 (Insecta: Coleoptera: Elateridae)

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ABSTRACT. The known species of the genus *Tropihypnus* REITTER, 1905 are reviewed. Eight new species of this group are described and illustrated, and a key to species and overviews of their geographical distributions are given. The following species are described as new to science: *Tropihypnus badongensis* n. sp. (China: Hubei), *T. lueangensis* n. sp. (China: Shaanxi), *T. petrae* n. sp. (China: Shaanxi), *T. pokharanus* n. sp. (Nepal), *T. schawalleri* n. sp. (Nepal), *T. schmidtii* n. sp. (Nepal), *T. tongshanensis* n. sp. (China: Hubei), and *T. wrasei* n. sp. (China: Yunnan).

Key words: entomology, taxonomy, Coleoptera, Elateridae, Negastrinae, *Tropihypnus*, new species, new records, review.

INTRODUCTION

The genus *Tropihypnus* was established by REITTER (1905) based on the type of *Paracardiophorus bimargo* REITTER (1896) from Issyk-Kul. FLEUTIAUX (1907) described *Hypnoidus bicarinatus* from Tonkin, which has been transferred by him several years later (FLEUTIAUX 1928) to the genus *Tropihypnus*. The same author in 1928 also described the *T. gardneri* and the *T. chatterjeei* from India. STIBICK (1968) published a paper in which he included the mentioned species, and beside these, *T. rungbongi*, *T. namsooa*, and *T. punjabae* from North India. In the same paper STIBICK (1968) published data and discussions of four further species he named unique A, unique B, unique C, and unique D. However, the publication of the mentioned species provided by STIBICK (1968) has to be taken only as information. He (STIBICK 1968) provided neither type-designations nor descriptions in accordance with the ICZN for these

unique-species. The same author (STIBICK 1971) placed *Tropihypnus* as a member of the subfamily Negastrinae NAKANE & KISHII, 1956. However, STIBICK (1971: 383-384) made a remarkable statement on the relations of *Tropihypnus*: "This genus does not seem closely related to any of the other genera [of the subfamily Negastrinae], but has a very vague similarity to *Monadicus* [a South-American genus!], in the form of parallel carinae of the hind angles [of pronotum]"

In this paper we follow the proposal of STIBICK (1971) concerning the establishment of *Tropihypnus* as a member of the Negastrinae.

Since the genus has been established by REITTER (1905) only a few papers dealing with *Tropihypnus* have been published, and our knowledge on the species of this genus is insufficient. Prior to this study, species of the genus *Tropihypnus* have been known only sporadically from Kyrgyzstan, Turkestan and Tonkin, and from the Himalayan districts Darjeeling, Sikkim, and Punjab of North India.

The delivery of newly collected material of the genus, especially from Himalaya and China, has enabled us to revise the species of this poorly known genus. As a result of this revision we described eight species as new to science. In total, fifteen species of the genus *Tropihypnus* REITTER, 1905 are known now from the provinces Hubei, Shaanxi, and Yunnan in China, from Tonkin, from Kazakhstan, Kyrgyzstan and Uzbekistan, from Pakistan, from the North-Indian provinces Darjeeling, Punjab, and Sikkim, and from the Nepalese districts Annapurna, Karnali and Dolakha, and from the Kali Gandaki Valley.

ABBREVIATIONS AND METHODS

The following abbreviations used in the study:

CMH	Coll. MERTLIK, Hradec Králové, Czech Republic;
CPG	Coll. PLATIA, Gatteo, Italy;
CRG	Coll. RIESE, Genova, Italy;
CSV	Coll. SCHIMMEL, Vinningen, Germany;
CTW	Coll. TARNAWSKI, Wrocław, Poland;
CZH	Coll. ZEISING, Hamburg, Germany;
ICZN	International Code for zoological nomenclature;
MTD	Museum für Naturkunde, Dresden, Germany;
NME	Naturkundemuseum, Erfurt, Germany;
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany;
TICB	TAMMIN Ins. Coll., Brno, Czech Republic.

Body length of the specimens has been measured from apical margin of frons up to apex of elytra, and body width along the middle of elytra.

SYSTEMATIC POSITION AND TAXONOMICAL REMARKS

Genus *Tropihypnus* REITTER, 1905

Tropihypnus REITTER, 1905: 9; SCHENKLING (1925: 216); FLEUTIAUX (1932: 254); GURJEVA (1963: 31); STIBICK (1968: 169).

Crypnoidus FLEUTIAUX, 1928: 252; 1930: 31.

The genus *Tropihypnus* belongs to the subfamily Negastrinae NAKANE & KISHII, 1956, and is delineated within this group by the characteristics described as follows.

REDESCRIPTION

Species unicoloured black, brown or blackish-brown, or pronotum red, head and elytra black (fig. 1); hairs tooth-shaped (fig. 2) or fine and uncinatate (fig. 3). Species of 4.6-5.6 mm in length and 1.4-1.8 mm in width.

Head flat; frons almost rectangular to slightly arcuate (fig. 4), projecting above clypeus, conspicuously raised above the base of antenna, and completely edged; antenna slender, reaching or outreaching the posterior angles of pronotum up to the length of the last three antennomeres, second and third antennomere cylindrical, the second half to two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs (fig. 5).

Pronotum campaniform, flat, just slightly raised at disc, arcuate laterally, constricted at the base of posterior angles, the latter divergent (fig. 6); pronotum with a complete carina on lateral edge, reaching from posterior up to anterior angles, and a second complete carina sublaterally (fig. 7), a third short carina at the inner side of the base of pronotum just reaching basal fifth; puncturation dense, interstices flat to wrinkled, and micropunctate (fig 8).

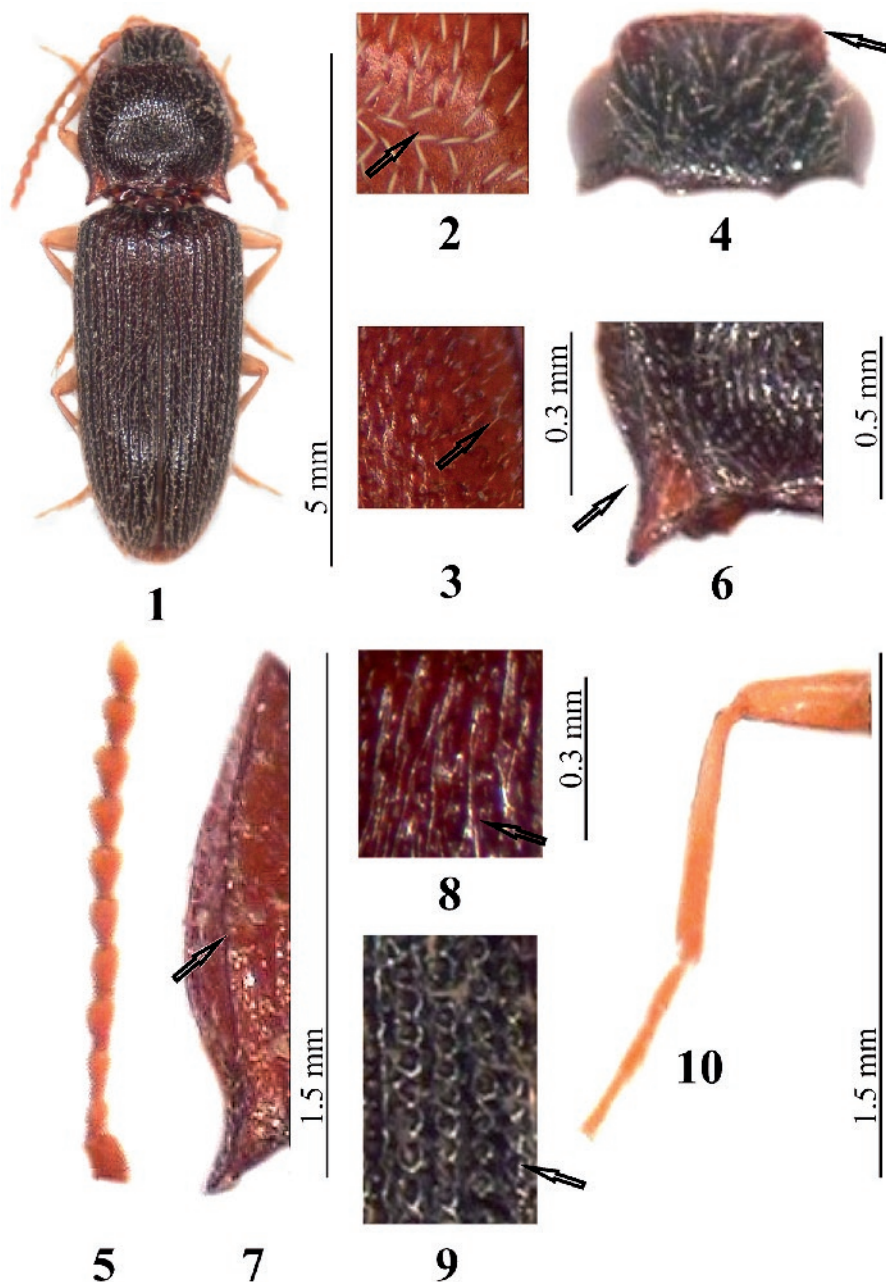
Scutellum wedge-shaped, slightly convex at base, medially with a raised hump.

Elytra elongate-flattened, with conspicuously raised and punctatelongitudinal striae (fig. 9); shoulder edged and a little raised (winged species), apex arcuate; interstices of striae laterally carinate.

Legs long and slender, femora thickened (fig. 10), tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple.

DIFFERENTIAL DIAGNOSIS

The species of the genus *Tropihypnus* have no closer relations to any of the further genera of the subfamily Negastrinae, but are delineated by the complete carina on lateral edge reaching from posterior up to anterior angles, and a second complete carina sublaterally, as well as by the tooth-shaped and uncinatate bristles covering the whole body.



1-10. Habitus and body parts of *Tropihypnus* sp.: 1 – habitus; 2 – tooth-shaped hairs of pronotum; 3 – fine and uncinat hairs of pronotum; 4 – rectangular frons; 5 – right antenna; 6 – constricted base of posterior angles of pronotum; 7 – lateral carina on pronotum; 8 – puncturation of pronotum; 9 – elytra striae; 10 – left middle leg

KEY TO SPECIES

(males)

1. Body covered with tooth-shaped, bristly white hairs; elytra attenuate, convex 2.
- Body covered with uncinata, bristly or fine hairs; elytra subparallel, depressed 3.
2. Unicoloured reddish species; antenna not reaching basal angles of pronotum for the length of the last two antennomeres *Tropihypnus unicolor*
- Bicoloured species; antenna not reaching basal angles of pronotum for the length of the last antennomere *Tropihypnus bimargo*
3. Body black, brown or reddish-brown, or black with posterior and anterior parts of pronotum reddish 8.
- Body red, head and elytra black or brown 4.
4. Interstices of pronotal puncturation wrinkled and raised 5.
- Interstices of pronotal puncturation flat 7.
5. Pronotum without raised median carina; antenna just reaching posterior angles of pronotum *T. tongshanensis*
- Pronotum with raised median carina 6.
6. Pronotum red; antenna outreaching posterior angles of pronotum by the length of the last two antennomeres *T. badongensis*
- Pronotum reddish-brown; antenna outreaching posterior angles of pronotum by the length of the last three antennomeres *T. petrae*
7. Elytra brown, its apex and base yellowish; puncturation of pronotum dense, interstices of puncturations half to once their diameter *T. schmidt*
- Elytra black; puncturation of pronotum less dense, interstices of puncturations once to four times their diameter *T. gardneri*
8. Body brown; puncturation of pronotum dense, interstices of punctures half their diameter; pubescence dense and yellowish *T. bicarinatus*
- Body black to reddish-brown 9.
9. Body reddish-brown; puncturation of pronotum moderately dense, interstices of punctures once their diameter *T. chatterjeei*
- Body black with posterior and anterior parts of pronotum reddish 10.
10. Body black, posterior and anterior angles of pronotum, as well as its anterior surface between the lateral and the sublateral carina reddish 11.
- Body black, posterior and anterior angles of pronotum reddish 13.
11. Antenna just reaching posterior angles of pronotum, the latter strongly divergent *T. namsooa*
- Antenna longer; posterior angles of pronotum less divergent 12.
12. Antenna outreaching posterior angles of pronotum by the length of the last antennomere *T. pokharanus*
- Antenna outreaching posterior angles of pronotum by the length of the last two antennomeres *T. lueangensis*

13. Punctuation of pronotum less dense, interstices of punctures flat, and half to once their diameter 14.
 -. Punctuation of pronotum dense, interstices of punctures raised and wrinkled *T. rungbongi*
 14. Antenna just reaching posterior angles of pronotum *T. punjabae*
 -. Antenna longer, outreaching posterior angles of pronotum by the length of the last antennomere 15.
 15. Punctuation of pronotum dense, interstices of punctures half their diameter *T. schawalleri*
 -. Punctuation of pronotum less dense, interstices of punctures once their diameter *T. wrasei*

REVIEW OF SPECIES

Tropihypnus badongensis n. sp.

(Figs. 11, 12)

LOCUS TYPICUS

China: Hubei province, Badong.

TYPE MATERIAL

Holotypus ♂ (CSV): China: Hubei province, Badong environment, stream valley, 26.VI.-10.VII.2003, leg. J. Turna. **Paratypes** 12 ♂♂, 12 ♀♀ (CPG, CSV, CTW): same data as Holotypus.

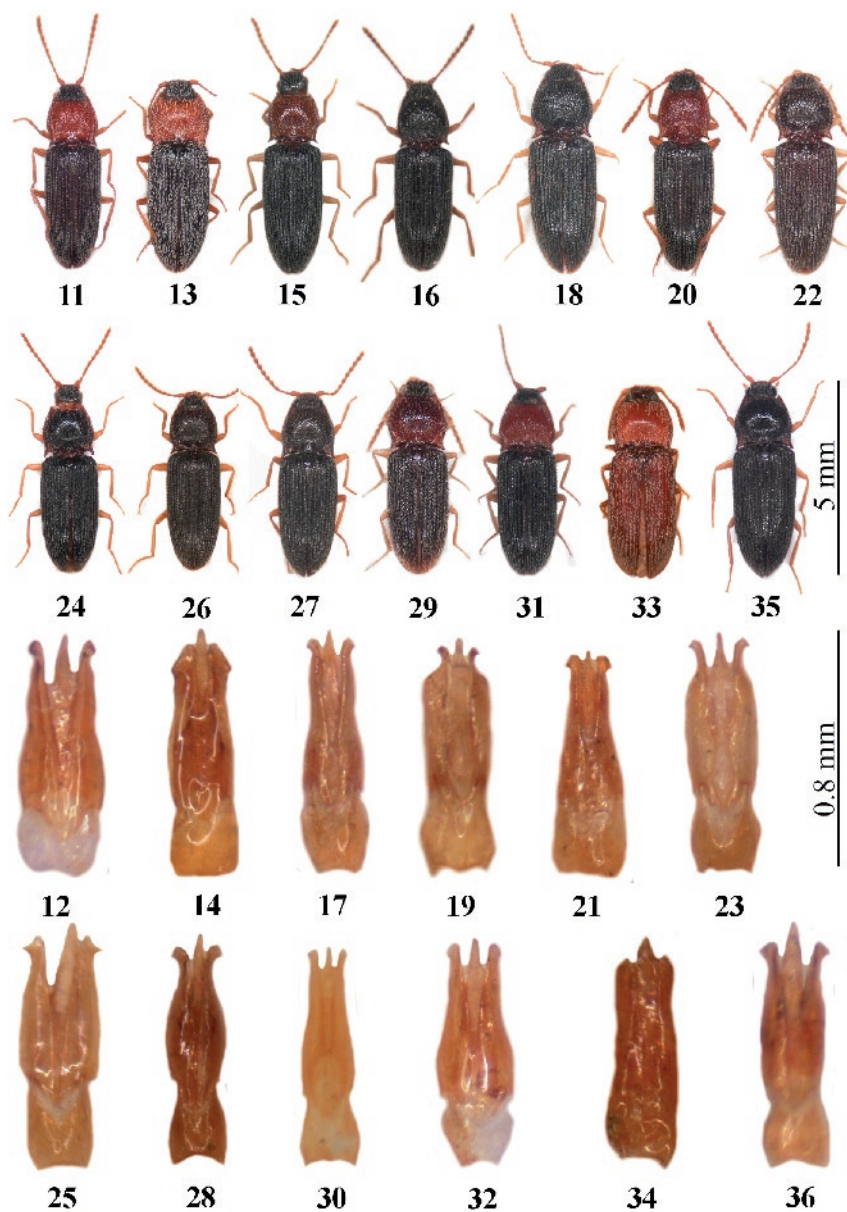
DIAGNOSIS

Holotypus ♂: Subparallel, flat, just slightly raised, and shiny species. Length: 5.0 mm, width: 1.5 mm. Head red and elytra black, antennae and legs yellow. Pubescence short, bristly, and uncinat, on pronotum bicoloured with a black base and a white apex, on head and elytra unicoloured white.

DESCRIPTION

Head flat; frons almost rectangular, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; punctuation of head less dense, coarse and deep, interstices of punctures once to one and a half their diameter; antenna slender, outreaching the posterior angles of pronotum by the length of the last two antennomeres, second and third antennomere cylindrical, the second two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum flat, just a little raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter strongly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching



11, 12. *Tropihypnus badongensis*: 11 – habitus, 12 – aedeagus; 13, 14. *T. bimargo* 13 – habitus, 14 – aedeagus; 15. Habitus of *T. gardneri*; 16, 17. *T. lueangensis*: 16 – habitus, 17 – aedeagus; 18, 19. *T. namsooa*: 18 – habitus, 19 – aedeagus; 20, 21. *T. petrae*: 20 – habitus, 21 – aedeagus; 22, 23. *T. pokharanus*: 22 – habitus, 23 – aedeagus; 24, 25. *T. punjabae*: 24 – habitus, 25 – aedeagus; 26. Habitus of *T. rungbongi*; 27, 28. *T. schawalleri*: 27 – habitus, 28 – aedeagus; 29, 30. *T. schmidtii*: 29 – habitus, 30 – aedeagus; 31, 32. *T. tongshanensis*: 31 – habitus, 32 – aedeagus; 33, 34. *T. unicolor*: 33 – habitus, 34 – aedeagus; 35, 36. *T. wrasei* n. sp.: 35 – habitus, 36 – aedeagus

from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak carina at the inner sides of the base of pronotum just reaching basal fifth; puncturation dense and oval, interstices raised, wrinkled and micropunctate; pronotum with a prominent median carina, which is reaching from basal third up to anterior edge; hairs short, bristly and uncinata, mostly inclined to the apex of pronotum.

Scutellum flat, wedge-shaped, slightly convex at base, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal double-rows of fine and dense, simple puncturation, interstices of striae finely punctate and shiny, the lateral one conspicuously raised and carinate. Pubescence short, bristly, and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinata.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe just outreaching apices of the paramere; the latter with a prominent, hook-like lateral edge, and long apical hairs.

Females have slightly shorter antennae than males, just reaching posterior angles of pronotum.

DIFFERENTIAL DIAGNOSIS

T. badongensis is closely allied to *T. petrae*, but can be easily distinguished from this species by the red pronotum, its strongly divergent posterior angles, the shorter antennae, and by the form of aedeagus.

VARIABILITY

The species is very constant in body colour and body part characteristics. Body length of various specimens is slightly different.

ETYMOLOGY

Named after the locus typicus.

DISTRIBUTION

China: Hubei province.

HABITAT

Stream valley.

***Tropihypnus bicarinatus* (FLEUTIAUX, 1907)**

Hypnoidus bicarinatus FLEUTIAUX, 1907: 164.

Crypnoidus bicarinatus: FLEUTIAUX (1928: 253).

Tropihypnus bicarinatus: SCHENKLING (1925: 210); STIBICK (1968: 184-185).

LOCUS TYPICUS

Tonkin: Boa Lac.

MATERIAL

Since the publication of the type material no data on further specimen of this species has come to our knowledge.

DISTRIBUTION

Tonkin.

HABITAT

Unknown.

***Tropihypnus bimargo* (REITTER, 1896)**

(Figs. 13, 14)

Paracardiophorus bimargo REITTER, 1896: 253.

Tropihypnus bimargo: REITTER (1905: 9); FLEUTIAUX (1932: 254); SCHENKLING (1925: 80); STIBICK (1968: 175).

Quasimus setosus BUYSSON, 1914: 42.

Tropihypnus bimargo ab. *alatauensis* JAGEMANN, 1939: 70.

LOCUS TYPICUS

Kyrgyzstan: Issyk-Kul.

NEW MATERIAL

Uzbekistan: Tian Schan, Tschimgan, 1500 m, 12.V.1989, leg. U. Heinig; Kyrgyzstan: Tashkumyr env., Kurp-saj, 4.VI.1997, leg. W. Dolin; Ferganski G.K., 2200 m, 13.VI.1995, leg. W. Dolin; Tian Shan, Ala Tau, Ala Arteche, 2000 m, 9.VII.1994, leg. D. Wrase; Tian Shan, Chatkal Ridge, Jangy Bazar, 3000 m, 8.-9.VI.1995, 5 spm., leg. P. Cechovsky; Kazakhstan: Dzhungar, Lepinsk, 1700 m, 1.V.1991, leg. W. Dolin.

DISTRIBUTION

Kyrgyzstan: Issyk-Kul, Tashkumyr, Ferganski, Tian Shan. Uzbekistan: Tian Shan. Kazakhstan: Dzhungar.

REMARKS

STIBICK (1968: 177) mentioned that a specimen of *T. bimargo* from Turkestan (Issyk-Kul), and one from China (Sinkiang Province, Tien-Shau), is preserved in the "Staatliches Museum für Tierkunde, Germany". Unfortunately, STIBICK (1968) in his

publication did not tell which of the various German museums for natural sciences he had in mind. On the other hand, lake Issyk-Kul is located in Kyrgyzstan, while the Tian Shan Mountains (in some publications named as Tyan Shan or Tien Shau) reach from Tadzhikistan across Kyrgyzstan up to the Sinkiang province in China.

HABITAT

Unknown.

***Tropihypnus chatterjeei* (FLEUTIAUX, 1928)**

Crypnoidus chatterjeei FLEUTIAUX 1928: 253;

Tropihypnus chatterjeei: STIBICK (1968: 185-186).

LOCUS TYPICUS

India: Darjeeling, Dehra-Dun.

MATERIAL

There is no new material known.

DISTRIBUTION

India: Darjeeling.

HABITAT

Unknown.

***Tropihypnus gardneri* (FLEUTIAUX, 1928)**

(Fig. 15)

Crypnoides gardneri FLEUTIAUX, 1928: 253.

Tropihypnus gardneri : STIBICK (1968: 183).

LOCUS TYPICUS

India: Himachal Pradesh, Kotgarh.

NEW MATERIAL

Nepal: Karnali province, Jumla distr., Talphi, 2900 m, 21.VI.1997, 1 spm., leg. M. Hartmann; same district, Diliichaur, 14.VI.1997, 1 spm., leg. M. Hartmann; Pakistan: Miandam, Swat Valley, 2300 m, VIII.1983, 1 spm., leg. C. Busi.

DISTRIBUTION

India: Himachal Pradesh, Utta Pradesh. Nepal: Karnali Province. Pakistan: Miandam.

HABITAT

Unknown.

***Tropihypnus lueangensis* n. sp.**

(Figs. 16, 17)

LOCUS TYPICUS

China: Shaanxi province, Lueang.

TYPE MATERIAL

Holotypus ♂ (CSV): China: Shaanxi province, environment, 15 km north-west of Lueang, 18.-21.VII.2001, leg. E. Kučera. **Paratypes** 9 ♂♂, 13 ♀♀ (CMH, CPG, CSV, CTW, SMNS): same data as Holotypus, 4 spm., leg. E. Kučera; same location but 23.V.-26.VI.2004, 3 spm., leg. E. Kučera; same location but 15.-22.VII.2005, 3 spm., leg. E. Kučera; same location but 26.V.1997, 4 spm., leg. E. Kučera; same location but 20.-28.V.2007, 5 spm., leg. E. Kučera; Sichuan, Emei Shan, Wannian, 600 m, 21.-29.III.1999, 1 spm., leg. P. Jäger; Sichuan, Pingwu, 7.VI.1997, 2 spm., leg. E. Kučera.

DIAGNOSIS

Holotypus ♂: Subparallel, flat, just slightly raised, and shiny species. Length: 5.2 mm, width: 1.6 mm. Black, surface between lateral and sublateral longitudinal carina of pronotum as well as posterior angles of the latter and prosternal process red, antenna and legs yellow. Pubescence short, bristly, and uncinat, on pronotum bicoloured with a black base and a white apex, on head and elytra unicoloured white.

DESCRIPTION

Head flat; frons slightly arcuate, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head less dense, coarse and deep, interstices of punctures once to one and a half their diameter; antenna slender, outreaching the posterior angles of pronotum by the length of the last two antennomeres, second and third antennomere cylindrical, the second two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind middle, pronotum flat, just a little raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter strongly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak carina at the inner sides of the base of pronotum just reaching basal fifth; puncturation dense and oval, interstices raised, wrinkled and micropunctate, forming longitudinal raised striae; hairs short, bristly and uncinat, mostly inclined to the apex of pronotum, forming a transverse parting at centre.

Scutellum flat, wedge-shaped, slightly convex at base, medially with a slightly raised hump, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal double-rows of fine and dense, simple puncturation, interstices of striae finely punctate and shiny, the lateral one conspicuously raised and carinate. Pubescence short, bristly, and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinata.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe just slightly outreaching apices of the paramere; the latter slightly arcuate subapically, and with a fine, just visible lateral edge, apices arcuate, and with long apical hairs.

Females have slightly shorter antennae than males, just reaching posterior angles of pronotum.

DIFFERENTIAL DIAGNOSIS

T. lueangensis is closely allied to *T. badongensis*, but can be easily distinguished from this species by the different colour of body, and by the form of aedeagus. From the similar *T. rungbongi* the new species can be separated by the different male genitalia.

VARIABILITY

There are specimen of totally brownish or reddish colour, or such where only the pronotum is reddish.

ETYMOLOGY

Named after the locus typicus.

DISTRIBUTION

China: Shaanxi province; Sichuan province.

HABITAT

Unknown.

Tropihypnus namsooa STIBICK, 1968

(Figs. 18, 19)

Tropihypnus namsooa STIBICK, 1968: 178-180.

LOCUS TYPICUS

India: Sikkim, Namsoo.

NEW MATERIAL

Nepal: Dolakha district, Suridhoban, 1050 m, 27.-28.V.2000, 1 spm., leg. W. Schawaller; same location but 5.VI.2000, 1 spm., leg. W. Schawaller; same location but 29.V.2000, 1 spm., leg. W. Schawaller; same location but 3.-4.VI.2000, 1 spm., leg. W. Schawaller.

DISTRIBUTION

India: Sikkim.

Nepal: Dolakha district.

HABITAT

At river bank with coarse gravel.

ECOLOGICAL REMARKS

The specimen have been collected at light (W. SCHAWALLER, written information)

***Tropihypnus petrae* n. sp.**

(Figs. 20, 21)

LOCUS TYPICUS

China: Shaanxi province, Dongjiangkou.

TYPE MATERIAL

Holotypus ♂ (MTD): China: Shaanxi province, 15 km south-west of Dongjiangkou, 14.-17.VII.1998, leg. Bolm. **Paratypes** 2 ♂♂, 7 ♀♀ (CMH, CSV, MTD): same data as Holotypus, 2 spm., leg. Bolm; Shaanxi, Qinling Shan, river bank (fine to coarse gravel), at the road from Zhouzhi to Foping, 95 km west/south-west of Xi'an, 950 m, 4.VII.2001, 4 spm., leg. D. Wrase; Shaanxi, Baiche, 16.VI.1997, 1 spm., leg. E. Kučera; Shaanxi, Lüeang, 25.V.1997, 1 spm., leg. E. Kučera; Fujian, Shaowu env., 5.-10.VII.1991, 1 spm., leg. E. Kučera.

DIAGNOSIS

Holotypus ♂: Subparallel, flat, just slightly raised, and shiny species. Length: 5.0 mm, width: 1.6 mm. Black, pronotum and elytra reddish-brown, legs yellow. Pubescence short, bristly, and uncinat, on pronotum bicoloured with a black base and a white apex, on head and elytra unicoloured white.

DESCRIPTION

Head flat; frons almost rectangular, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head less dense, coarse and deep, interstices of punctures twice to one fourth their diameter; antenna slender, outreaching the posterior angles of pronotum by the length of the last three antennomeres, second and third antennomere cylindrical, the second half of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with

short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum flat, just a little raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter slightly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak carina at the inner sides of the base of pronotum just reaching basal fifth; puncturation dense and oval, interstices raised, wrinkled and micropunctate; pronotum with a prominent median carina, which is reaching from basal third up to anterior edge; hairs short, bristly and uncinata, mostly inclined to the apex of pronotum.

Scutellum flat, wedge-shaped, slightly convex at base, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal double-rows of fine and dense, simple puncturation, interstices of striae finely punctate and shiny, the lateral one conspicuously raised and carinate. Pubescence short, bristly, and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderate shiny; pubescence short and uncinata.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe just slightly outreaching apices of the paramere; the latter with a prominent, hook-like lateral edge, and long apical hairs.

Females have slightly shorter antennae than males, just reaching posterior angles of pronotum.

DIFFERENTIAL DIAGNOSIS

T. petrae is closely allied to *T. badongensis*, but can be easily distinguished from this species by the reddish-brown pronotum, its slightly divergent posterior angles, the longer antenna, and by the form of aedeagus.

VARIABILITY

The species is very constant in colour and other characteristics.

ETYMOLOGY

Named after our dear woman-friend, Mrs. P. JUNG, Zweibrücken, honouring her engaged assistance in our studies.

DISTRIBUTION

China: Shaanxi province.

HABITAT

River bank with fine to coarse gravel.

***Tropihypnus pokharanus* n. sp.**

(Figs. 22, 23)

LOCUS TYPICUS

Nepal: Annapurna, from Pokhara to Pame.

TYPE MATERIAL

Holotypus ♂ (MTD): Nepal: Annapurna, from Pokhara to Pame, 800 m, 18.V.1996, leg. J. Schmidt & O. Jäger. **Paratypes** 2 ♂♂, 5 ♀♀ (CSV, MTD): same data as Holotypus, 3 spm., leg. J. Schmidt & O. Jäger; Annapurna, Pokhara valley river near Pame, 830 m, 18.V.1996, 2 spm, leg. J. Schmidt; same location but 7.VI.2004, 2 spm., leg. J. Schmidt.

DIAGNOSIS

Holotypus ♂: Subparallel, flat, just slightly raised, and shiny species. Length: 5.6 mm, width: 1.8 mm. Black, surface between lateral and sublateral longitudinal carina of pronotum, as well as posterior angles of the latter, and prosternal process red, antenna and legs yellow. Pubescence short, fine, uncinat, and yellowish-white.

DESCRIPTION

Head flat; frons slightly arcuate, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head less dense, coarse and deep, interstices of punctures once to one and a half their diameter; antenna slender, outreaching the posterior angles of pronotum by the length of the last antennomere, second and third antennomere cylindrical, and almost equal in length, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum little raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter strongly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak carina at the inner sides of the base of pronotum just reaching basal fifth; puncturation dense and oval, interstices raised, wrinkled and micropunctate, forming longitudinal, chain-like, raised striae; hairs long, fine and uncinat, mostly inclined to the apex of pronotum, forming a transverse parting at centre.

Scutellum flat, wedge-shaped, slightly convex at base, medially with a slightly raised hump, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat,

not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal rows of fine and dense, simple puncturation, interstices of striae finely punctate and shiny, the lateral one conspicuously raised and carinate. Pubescence short, bristly, and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinata.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe just slightly outreaching apices of the paramere; the latter conspicuously arcuate subapically, and with a prominent lateral edge, apices acute, and with long apical hairs.

Females have slightly shorter antennae than males, just reaching posterior angles of pronotum.

DIFFERENTIAL DIAGNOSIS

T. pokharanus is closely allied to *T. lueangensis*, but can be easily distinguished from this species by the shorter antenna, the different structure of pronotum surface, and by the form of aedeagus.

VARIABILITY

The studied specimens are very constant in body colour and other characteristics.

ETYMOLOGY

Named after the locus typicus.

DISTRIBUTION

Nepal: Annapurna.

HABITAT

Unknown.

***Tropihypnus punjabae* STIBICK, 1968**

(Figs. 24, 25)

Tropihypnus punjabae STIBICK, 1968: 181-183.

LOCUS TYPICUS

India: Punjab, Jibhi.

NEW MATERIAL

Nepal: Annapurna Base, 1000-3000 m, 1.-8.X.1992, 1 spm., leg. L. Schmidt.

DISTRIBUTION

India: Punjab.

HABITAT

Unknown.

***Tropihypnus rungbongi* STIBICK, 1968**

(Fig. 26)

Tropihypnus rungbongi STIBICK, 1968: 172-174.

LOCUS TYPICUS

India: Darjeeling, Gopaldhara, Rungbong Valley.

NEW MATERIAL

Nepal: Khimti Khola, Shivalaya, 1800 m, 9.IV.1973, 1 spm., leg. J. Martens; Tablejung distr., Kabeli Khola Valley, Shima forest, cultural land, 950-1050 m, 1 spm., leg. J. Martens & W. Schawaller.

DISTRIBUTION

India: Darjeeling.

Nepal: Khimti Khola Valley; Kabeli Khola Valley.

HABITAT

River Valley.

***Tropihypnus schawalleri* n. sp.**

(Figs. 27, 28)

LOCUS TYPICUS

Nepal: Dolakha district, lower Khare Khola.

TYPE MATERIAL

Holotypus ♂ (SMNS): Nepal: Dolakha district, Suridhoban, 1050 m, 27.-28.V.2000, leg. W. Schawaller. **Paratypes** 7 ♂♂, 4 ♀♀ (SMNS, CSV, CZH): Same data as Holotypus, 6 spm., leg. W. Schawaller; Nepal: Dolakha district, lower Khare Khola, 1200 m, 3.-4.VI.2000, 1 spm., leg. W. Schawaller; same location but 1900-1200 m, 3.VI.2000, 2 spm., leg. W. Schawaller; Annapurna Base, 1000-3000 m, 1.-8.X.1992, 1 spm., leg. L. Schmidt; South of Dhaulagiri, Myagdi Khola valley, 1000 m, 22.V.2004, 1 spm., leg. Schmidt.

DIAGNOSIS

Holotypus ♂: Subparallel, slightly raised, and shiny species. Length: 5.3 mm, width: 1.7 mm. Black, apices and anterior and posterior angles of pronotum reddish, legs and antenna reddish-yellow. Pubescence short, bristly, and uncinat, on pronotum bicoloured with a black base and a white apex, and with head and elytra unicoloured white.

DESCRIPTION

Head flat; frons slightly convex, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head dense, coarse and deep, interstices of punctures half their diameter; antenna slender, outreaching the posterior angles of pronotum by the length of the last antennomere, second and third antennomere cylindrical, the second two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum smoothly raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter strongly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak carina at the inner sides of the base of pronotum just reaching basal fifth; puncturation dense and oval, interstices of punctures half their diameter, flat and micropunctate; hairs short, bristly and uncinat, mostly inclined to the apex of pronotum, forming a transverse parting at disc.

Scutellum flat, wedge-shaped, slightly convex at base, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with a single longitudinal row of fine and dense, simple puncturation, interstices of striae finely punctate and shiny, the lateral one conspicuously raised and carinate. Pubescence short, bristly, and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinat.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe outreaching apices of the paramere conspicuously; the latter with prominent, hook-like lateral edge, and long apical hairs, subapically prominently arcuate.

Females have slightly shorter antennae than males, not reaching posterior angles of pronotum for the length of the last antennomere.

DIFFERENTIAL DIAGNOSIS

T. schawalleri is closely allied to *T. rungbongi*, but can be easily distinguished from this species by the shorter interstices of puncturation of pronotum, and by the form of aedeagus.

VARIABILITY

The species is very constant in colour and other characteristics. Body length of the various specimen is differing slightly to a degree of approximately 3%.

ETYMOLOGY

Named after the discoverer of the new species, Dr. W. SCHAWALLER, Staatliches Museum für Naturkunde, Stuttgart.

DISTRIBUTION

Nepal: Dolakha district, Khare Khola valley.

HABITAT

River bank with coarse gravel.

ECOLOGICAL REMARKS

The specimen have been collected at light (W. SCHAWALLER, written information)

***Tropihypnus schmidtii* n. sp.**

(Figs. 29, 30)

LOCUS TYPICUS

Nepal: Annapurna region.

TYPE MATERIAL

Holotypus ♂ (MTD): Nepal: Kali Gandaki, between Tatopani and Beni, 1000 m, 29.X.1992, leg. J. Schmidt. **Paratypes** 3 ♂♂, 5 ♀♀ (CSV, MTD): same data as Holotypus, 7 spm., leg. J. Schmidt; Nepal: Annapurna, from Pokhara to Pame, 18.V.1996, 1 spm., leg. J. Schmidt.

DIAGNOSIS

Holotypus ♂: Subparallel, flat, just slightly raised, and shiny species. Length: 4.9 mm, width: 1.5 mm. Brown, pronotum, legs, antenna, apex and base of elytra, as well as the frons yellowish. Pubescence long, thin, fine, uncinatate, and yellowish-white.

DESCRIPTION

Head flat; frons almost rectangular, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head less dense, coarse and deep, interstices of punctures twice to one fourth their diameter; head covered with long, thin and protruding hairs; antenna slender, outreaching the posterior angles of pronotum by the length of the last antennomere, second and third antennomere cylindrical, the second two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum flat, just a little raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter slightly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak, just visible carina at the inner sides of the base of pronotum reaching basal fifth; puncturation dense and oval, interstices half to once their diameter and flat; hairs long, fine and uncinat, mostly inclined to the apex of pronotum, some of them conspicuously erected.

Scutellum flat, wedge-shaped, slightly convex at base and with a conspicuously raised median hump, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal rows of dense, prominently deep and simple puncturation, interstices of striae finely puncturationd, shiny and little raised, laterally carinate. Pubescence long, fine and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinat.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe as long as apices of the paramere; the latter with a very short, hook-like lateral edge, and long apical hairs.

Females have slightly shorter antennae than males, just reaching posterior angles of pronotum.

DIFFERENTIAL DIAGNOSIS

T. schmidt is closely allied to *T. bimargo*, but can be easily distinguished from this species by the smaller body, the blackish-brown elytra, its prominent puncturation, their fine hairs, the longer antenna, and by the form of aedeagus.

VARIABILITY

The species is very constant in colour and other characteristics.

ETYMOLOGY

Named after the discoverer of the new species, Mr. J. SCHMIDT.

DISTRIBUTION

Nepal: Annapurna district; Kali Gandaki Valley.

HABITAT

Unknown.

***Tropihypnus tongshanensis* n. sp.**

(Figs. 31, 32)

LOCUS TYPICUS

China: Hubei province, Badong.

TYPE MATERIAL

Holotypus ♂ (CSV): China: Hubei province, 20 km north-west of Tongshan, stream valley, 6.+19.VI.2002, leg. J. Turna. **Paratypes** 3 ♀♀ (CSV, CTW): same data as Holotypus.

DIAGNOSIS

Holotypus ♂: Subparallel, flat, just slightly raised, and shiny species. Length: 4.6 mm, width: 1.4 mm. Black, pronotum reddish-yellow, antenna and legs yellow. Pubescence short, bristly, and uncinat, on pronotum bicoloured with a black base and a white apex, on head and elytra unicoloured white.

DESCRIPTION

Head flat, its disc humpy; frons slightly arcuate, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head less dense, coarse and deep, interstices of punctures once to twice their diameter; antenna slender, reaching the posterior angles of pronotum, second and third antennomere cylindrical, the second two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum flat, just a little raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter strongly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak carina at the inner sides of the base of pronotum just reaching basal fifth; puncturation dense and oval, interstices raised, wrinkled and micropunctate, forming longitudinal raised striae; hairs short, bristly and uncinat, mostly inclined to the apex of pronotum.

Scutellum wedge-shaped, slightly convex at base, medially with a slightly raised hump, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal double-rows of fine and dense, simple puncturation, interstices of striae finely punctate and shiny, the lateral one conspicuously raised and carinate. Pubescence short, bristly, and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinata.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with a median lobe only slightly outreaching apices of the paramere; the latter with a fine, just visible lateral edge, arcuate apex, and long apical hairs.

Females have slightly shorter antennae than males, just reaching posterior angles of pronotum.

DIFFERENTIAL DIAGNOSIS

T. tongshanensis is closely allied to *T. badongensis*, but can be easily distinguished from this species by the smaller body, the shorter antenna, the wrinkled interstices of puncturation of pronotum which is forming longitudinal striae, and by the form of aedeagus.

VARIABILITY

The species is very constant in colour and other characteristics.

ETYMOLOGY

Named after the locus typicus.

DISTRIBUTION

China: Hubei province.

HABITAT

Stream valley.

***Tropihypnus unicolor* GURJEVA, 1987**

(Figs. 33, 34)

Tropihypnus unicolor GURJEVA, 1987: 50-51.

LOCUS TYPICUS

Tajikistan.

NEW MATERIAL

Turkestan: Aksu-Wüste, 1 Ex., coll. F. Hauser [Turkestan: Aksu desert, 1 spm., coll. F. Hauser].

DIAGNOSIS

Male. Unicoloured, light red-brown, with scarce, narrow light-yellow scales. Length 3.5 mm, width 1.0 mm.

Description (Translation of the Original description)

Forehead (before a raised narrow and sharp front slit) obtuse, smooth, with uniform seta-bearing pores, the remaining head surface uneven. Antennae don't get closer to apices of rear angles of pronotum than the length of 2 segments; first segment clearly narrow, 3 times longer than wide. Second segment almost cylindrical, similar in length to the fourth and clearly shorter than the third, 2 times longer than wide. Third segment a bit narrower than the second. The fourth of the same width as the second, clearly extended towards the apex. Segments fifth to tenth waterdrop-shaped, segments widen gradually towards the apex of the antenna, so that the fifth is longer than wide and tenth of equal width and length.

Pronotum of nearly equal width and length, widest a little away from the middle, from where it becomes narrower, in the shape of an arc (somewhat stronger towards the front than towards the rear); rear angles elongated, pointed towards the rear; pointage deep and sparse, punctures oval, distances between punctures clearly larger than their diameters.

Propleurs pointed in the same manner as the pronotum.

Scutellum of equal width and height, the middle of its front edge somewhat raised and extended to the front.

Elytra of nearly the same width and 2.5 times the length of the pronotum, egg-shaped, their front edge sharply extended towards the front opposite the fourth row; rows deep and thin, grooves in them shallow, but with a wide, dark lamination going far beyond the front row; patches near the front edge and sides obtuse, flat on the remaining surface, with hardly visible carving.

Female unknown.

Differential diagnosis

This species is closely related to *Tropihypnus chatterjeei* FLEUT., but may be easily distinguished by far smaller body dimensions, colouration of legs and structure of antennae. It may be distinguished from *Tropihypnus bimargo* (RTT.) by the following characteristics:

T. bimargo: Forehead hollow. First segment of antennae wider; 2.3 times longer than wide. Pronotum clearly wider than long. Frontal edge of elytra frontally nearly round. Seta on elytra formed in rows pointing down on every row and patch.

T. unicolor: Forehead obtuse. First segment of antennae narrower; nearly 3 times longer than wide. Pronotum very slightly wider than long. Frontal edge of elytra with a sharp protrusion in the front (drawing 3). Seta on elytra placed only in the centres of patches.

Distribution

Tajikistan; Turkestan.

HABITAT

Unknown.

Tropihypnus wrasei n. sp.

(Figs. 35, 36)

LOCUS TYPICUS

China: Yunnan: Dali Bai Nat. Aut. Pref.

TYPE MATERIAL

Holotypus ♂ (SMNS): China: Yunnan, Dali Bai Nat. Aut. Pref., Diancang Shan, 3 km west of Dali, 2750 m, 20.-23.V.2005, leg. D. Wrase.

DIAGNOSIS

Holotypus ♂: Subparallel, slightly raised, and shiny species. Length: 4.8 mm, width: 1.6 mm. Black, posterior and anterior angles of pronotum, its anterior surface between the lateral and sublateral longitudinal carina, as well as the abdomen reddish-brown, legs and antenna yellowish. Pubescence long, fine, uncinata, and yellowish-brown.

DESCRIPTION

Head flat, its disc humpy; frons convex, and projecting the clypeus, conspicuously raised above the base of antenna, and completely edged; puncturation of head dense, coarse and deep, interstices of punctures half to once their diameter; antenna slender, outreaching the posterior angles of pronotum by the length of the last antennomere, second and third antennomere cylindrical, the second two thirds of the length of third antennomere, fourth to tenth antennomere fusiform, and as long as third antennomere, last antennomere oval, subapically bevelled; antenna covered with short and bristly hairs.

Pronotum campaniform, along median line as long as wide at posterior angles and behind the middle, pronotum smoothly raised at disc, conspicuously arcuate on lateral sides, constricted at the base of posterior angles, the latter slightly divergent, and acute at apex; pronotum with a complete carina on lateral edge which is reaching from posterior up to anterior angles, and a second complete carina sublaterally; a third short and weak, just visible carina at the inner sides of the base of pronotum reaching basal fifth; puncturation less dense and oval, interstices of punctures once their diameter and flat; hairs long, fine and uncinata, mostly inclined to the apex of pronotum, forming a transverse parting on disc.

Scutellum flat, wedge-shaped, slightly convex at base and with a conspicuously raised median hump, laterally straight, and arcuate at apex. Surface flat, puncturation fine, just visible, interstices of punctures three to four times their diameter, pubescence fine and longer than that of pronotum and elytra, and pointed from basis to apex.

Elytra subparallel, flat and wedge-shaped, after apical third narrowed to apex; apex arcuate, without an inner tooth; base slightly wider than that of pronotum, flat, not depressed at scutellum; basal margin raised, shoulder slightly prominent (winged species); striae of elytra with longitudinal rows of dense, fine, just visible and flat puncturation, interstices of striae finely puncturationd, dull and wrinkly raised, laterally carinate. Pubescence shorter, just visible and inclined to apex.

Pro-, meso- and metathorax with dense and rugose puncturation, interstices of punctures slightly raised and moderately shiny; pubescence short and uncinat.

Legs slender, moderately long and thin, femora thickened, tibiae covered with short bristles, tarsus covered with long and fine hairs, claws simple, tarsomeres up to claws of decreasing length.

Aedeagus trilobate, with median lobe conspicuously extending apices of the paramere; the latter with a hook-like lateral edge, the apex triangular and covered with long apical hairs.

Females are unknown.

DIFFERENTIAL DIAGNOSIS

T. wrasei is closely allied to *T. schmidtii*, but can be easily distinguished from this species by the different colour of the smoothly raised body, and by the form of aedeagus.

ETYMOLOGY

Named after the discoverer of the new species, Mr. D. WRASE, Berlin.

DISTRIBUTION

China: Yunnan province.

HABITAT

Unknown.

CHECKLIST OF THE *TROPIHYPNUS*-SPECIES WITH GEOGRAPHICAL DISTRIBUTION

The species of the genus *Tropihypnus* occur along the border of the Palaearctic and Oriental region, in the higher mountain regions of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, in that of Pakistan, in the North-Indian provinces Darjeeling, Punjab, Uttar Pradesh, and Sikkim, in the Nepalese districts Annapurna, Karnali, Dolakha, and the Kali Gandaki Valley, in the northern territories of Tonkin, and in the Chinese provinces Yunnan, Hubei and Shaanxi. In accordance with this geographical distribution, the species of the genus *Tropihypnus* can be described as forms distributed in the East Palaearctic, preferring high altitude habitats.

China (Hubei): *Tropihypnus badongensis*, *T. tongshanensis*

China (Shaanxi): *Tropihypnus lueangensis*, *T. petrae*

China (Sichuan): *Tropihypnus lueangensis*

China (Yunnan): *Tropihypnus wrasei*

Vietnam: Tonkin: *Tropihypnus bicarinatus*

Kazakhstan: *Tropihypnus bimargo*

Kyrgyzstan: *Tropihypnus bimargo*

Uzbekistan: *Tropihypnus bimargo*

Tajikistan: *Tropihypnus unicolor*

North-India (Darjeeling): *Tropihypnus chatterjeei*, *T. rungboni*

North-India (Himachal Pradesh): *Tropihypnus gardneri*

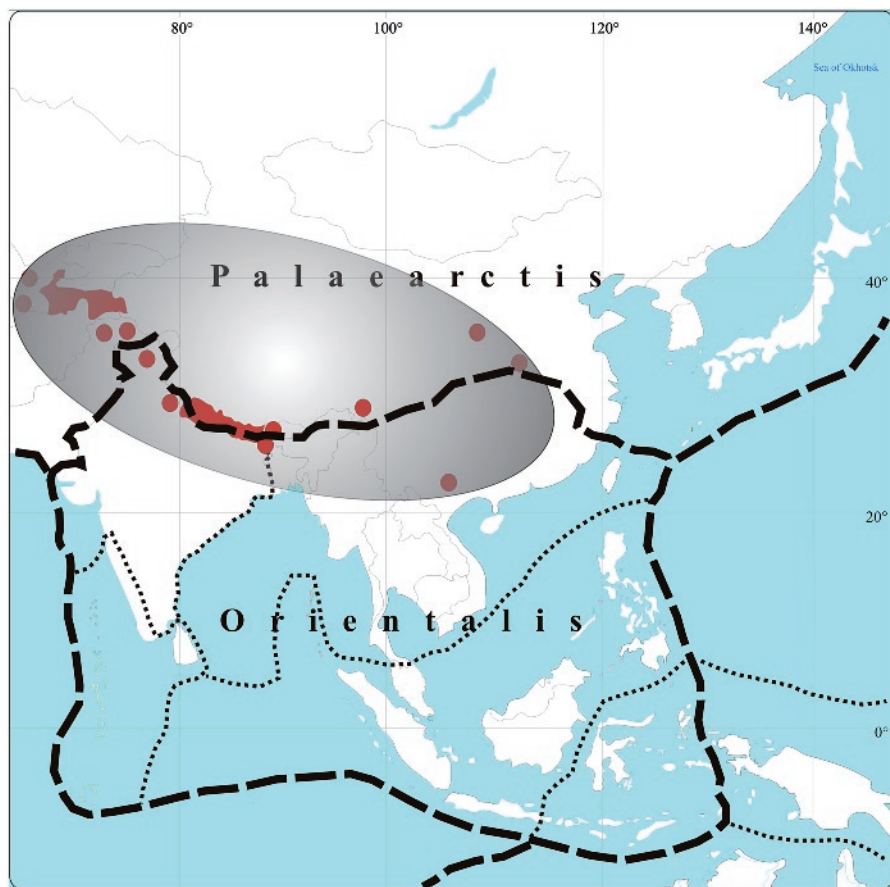
North-India (Uttar Pradesh): *Tropihypnus gardneri*

North-India (Sikkim): *Tropihypnus namsooa*

North-India (Punjab): *Tropihypnus punjabae*

Pakistan: *Tropihypnus gardneri*

Nepal: *Tropihypnus gardneri*, *T. namsooa*, *T. pokharanus*, *T. rungboni*, *T. schawalleri*, *T. schmidt*



Map 1: Dispersions of the species of the genus *Tropihypnus*.

ECOLOGICAL REMARKS

Newly collected material of the species *Tropihypnus badongensis*, *T. gardneri*, *T. rungboni* and *T. tongshanensis* has been found in stream and river valleys. The specimens have been discovered on river banks under stones, and between gravel in

certain wet habitats. STIBICK (1968: 171) in his paper made reference to FLEUTIAUX (1928) who stated that “several species are found under stones along rivers”. The habitats of the newly collected material are at 600 to 3000 m in altitude. Most of the material of these species has been collected between 1000 and 2300 m in altitude. This classifies these species as occupants of mountain regions, and living in dependency of stream and river banks, where they occur along edges under stones and between gravel. This way of life is similar to that of species of other genera of the subfamily Nogastrinae.

DISTRIBUTION AND DISPERSIONS

As shown on Map 1, the geographical Distribution of the species of the genus *Tropihypnus* is conspicuously corresponding with the border between the Palaearctic and the Oriental regions. The currently known distribution of the species covers the



Photo 1. Nepal: Dolakha district, Suridhoban, 1050 m, valley of Khare Khola
(Photo W. SCHAWALLER, May 2000)

regions from 68° to 110° eastern longitude, and 40° to 25° southern latitude. From west to the east the species follow the river and stream valleys in the mountains of Tian Shan, Pamir, Karakorum, Himalaya, Ningjiang Shan and Daba Shan, from 600 up to 3000 m in altitude. The ability of the species to spread is consequentially limited by geographical and chorological factors, as well as by the necessity of finding special habitats, which seem to be available under stones on river banks exclusively.

DISCUSSION

All the specimens of the species of the genus *Tropihypnus* share certain common characteristics, such as the flat body, and the conspicuous constriction at the base of the posterior angles of pronotum. These characteristics are almost identical in all species, and within the group of *Tropihypnus* they have to be taken as plesiomorphy. However, these characteristics are also present in some other groups of species, for instance in many of the beetle-family Carabidae. In the light of phylogeny the mentioned characteristics are undoubtedly to be taken as adaptations to the environment in which they live, and based on convergent evolution in the various groups of Coleoptera.

The flat body of the specimens of the various species of the genus *Tropihypnus* is most likely an adaptation to the habitat in which they live. There is not much space available between the stones at river banks where the specimens occur, and for specimen living in such a coarctate place becoming a flat body that fits this small sphere is most beneficial.

The constriction of the base of posterior angles of pronotum in all species of this genus is most likely based on the need of the specimen to move around in their habitats. And the best way to sweep with the knees of the fore and middle legs while moving is to have a free and open space in the opposite area of the pronotum. This necessity of course is the case for all species living on the ground and moving by using their legs. As a result of this necessity, the pronotum of these species became in time more and more campaniform, with a tendency to cordiform, and the base of posterior angles has been modified to constricted or excavated (ref. to BRANCUCCI & HENRICH (2006)).

On the other hand, the specimen of the genus *Tropihypnus* have fully intact wings, and flight muscles, and have been collected (flying) at light (SCHAWALLER, verbal information). Therefore, it seems to be proved that these species move also as flyers, and because of the wide-spread distribution of some of them, it is most likely that they distribute their populations by flight. The currently known chorological distribution data of the species, which covers the altitude between 600 and 3000 m, support this supposition as well.

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